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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,087	07/31/2006	Chul-Hee Lee	4900-06091729	4022
23429 7590 08/03/2010 LOWE HAUPTMAN HAM & BERNER, LLP 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER ALAM, FAYYAZ				
ART UNIT PAPER NUMBER 2618				
MAIL DATE DELIVERY MODE 08/03/2010 PAPER				

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/588,087

Applicant(s)

LEE ET AL.

Examiner

FAYYAZ ALAM

Art Unit

2618

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7, 9-15 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9-15 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to applicant's amendment/arguments filed on 5/27/2010. **This action is made FINAL.**

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Please see rejection below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10-15, and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by **Hakenburg et al. (USPN 6,792,470)**.

Consider **claims 1**, Hakenburg discloses a method of measuring transmission quality of multimedia data, comprising the steps of: (a) a transmitter (read as video server 110) transmitting multimedia data (read as video) through a forward channel to a receiver (read as video client 160) (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the server to the client); (b) the transmitter receiving, through a return channel, transmission error information (read as NACK or MACK plus

arrival times and length of two most recent frames received at the client) on errors occurring during the multimedia data transmission to the receiver (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected at the client a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission); estimating (read as estimating arrival time of the lost frame if it were to be retransmitted), at the transmitter, multimedia data received by the receiver (read as lost frame and preceding frames) by using the received transmission error information (read as NACK) and the transmitted multimedia data (read as lost frame and two preceding frame) (col. 6, lines 28-42; fig. 5 and associated text; estimating the arrival time of the lost frame and determining whether to retransmit or not, is an estimate of what video packets are being displayed at the client and whether the lost packet has been displayed or not and result of the estimation and determination is the estimated received multimedia data); and measuring (read as comparing priority level of the lost frame), at the transmitter, transmission quality (read as priority level, since importance of I frames are higher due to better quality) of the multimedia data (read as lost frame) received by the receiver by comparing the estimated received multimedia data (read as result of estimation of arrival time and determination whether to retransmit) with reference data (read as priority threshold) (see col. 6, lines 43-54; figs. 5-6; and 9 and associated text).

Consider **claim 12**, Hakenburg discloses an apparatus for measuring transmission quality of multimedia data, comprising: a transmitter (read as video server 110) for transmitting multimedia data (read as video) through a forward channel to a

receiver (read as video client 160) (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the server to the client), wherein the transmitter comprises an encoding unit for encoding source multimedia to encoded multimedia data (see fig. 2 and associated text); received video estimation unit for receiving, on a return channel, transmission error information (read as NACK or MACK plus arrival times and length of two most recent frames received at the client) on errors occurring during the multimedia data transmission to the receiver (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected at the client a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission), and estimating (read as estimating arrival time of the lost frame if it were to be retransmitted), at the transmitter, multimedia data received by the receiver (read as lost frame and preceding frames) by using the received transmission error information (read as NACK) and the transmitted multimedia data (read as lost frame and two preceding frame) (col. 6, lines 28-42; fig. 5 and associated text; estimating the arrival time of the lost frame and determining whether to retransmit or not, is an estimate of what video packets are being displayed at the client and whether the lost packet has been displayed or not and result of the estimation and determination is the estimated received multimedia data); and an evaluation unit for evaluating (read as comparing priority level of the lost frame) transmission quality (read as priority level, since importance of I frames are higher due to better quality) of the multimedia data (read as lost frame) received by the receiver by comparing the estimated received multimedia data (read as result of estimation of arrival time and

determination whether to retransmit) with reference data (read as priority threshold) (see col. 6, lines 43-54; figs. 5-6; and 9 and associated text).

Consider **claim 23**, Hakenburg discloses a method of measuring transmission quality of multimedia data, comprising the steps of (similar citation and reasoning apply as claim 1 above): (a) transmitting multimedia data through a channel by a transmitter to a receiver (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the transmitter to the receiver and the transmitter); (b) extracting a set of parameters (read as time stamp and frame length) extracted from a video segment of received multimedia data which are affected by transmission errors (read as lost frames); (c) transmitting the extracted set of parameters to the transmitter through a return channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission); and (d) measuring, by the transmitter, a transmission quality by using the set of parameters and reference data (read as priority threshold) (see figs. 5-6 and associated text).

Consider **claim 24**, Hakenburg discloses an apparatus for measuring transmission quality of multimedia data, comprising: a transmitter for transmitting multimedia data through a channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the transmitter to the receiver); and a receiver for: receiving the transmitted multimedia data, detecting transmission errors (read as lost frames), extracting a set of parameters (read as time stamp and frame length) from a

video segment affected by the transmission errors (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission), and transmitting the set of parameters through a return channel to the transmitter, wherein the transmitter comprises, an encoding unit encoding source multimedia data to encoded multimedia data (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2); and an evaluation unit for evaluating (read as comparing priority level of the lost frame) transmission quality (read as priority level, since importance of I frames are higher due to better quality) of the multimedia data (read as lost frame) received by the receiver by comparing the estimated received multimedia data (read as result of estimation of arrival time and determination whether to retransmit) with reference data (read as priority threshold) (see col. 6, lines 43-54; figs. 5-6; and 9 and associated text).

Consider **claims 2 and 13** as applied to respective claims, Hakenburg discloses the step (b) is performed in such a way as to transmit the error information to the transmitter through the return channel only when a transmission error of the multimedia data is detected (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 3 and 14** as applied to respective claims, Hakenburg discloses the step (b) comprises the step of compensating errors by applying an error concealment technique to the received multimedia data (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 4 and 15** as applied to respective claims, Hakenburg discloses the step (b) is performed in such a way as to transmit information on the employed error concealment technique and error information to the transmitter through the return channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 10 and 20** as applied to respective claims, Hakenburg discloses the step of, after the step (d): (e) selectively maintaining or changing a transmission state of the multimedia data through the channel depending on the evaluation result of transmission quality (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 11, 21, and 22** as applied to respective claims, Hakenburg discloses the step (e) is performed in such a way as to perform at least one of operations of terminating video transmission, increasing the channel bandwidth, employing an error correction technique, and switching to another CODEC robust against channel errors depending on evaluation results of transmission quality so as to change the transmission state (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7, 9, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hakenburg et al. (USPN 6,792,470)** in view of **Cooper et al. (USPN 20020044531)**.

Consider **claims 7 and 18** as applied to respective claims, Hakenburg as modified by Cooper discloses the reference data is the transmitted multimedia data (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Hakenburg with the teachings of Cooper in order to determine communication channel quality and apply mitigating techniques to achieve a desired quality of service.

Consider **claims 9 and 19** as applied to respective claims, Hakenburg as modified by Cooper discloses the step (d) is performed in such a way as to estimate the transmission quality by using any one of a full-reference method, a reduced-reference method, and a no reference method (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Hakenburg with the teachings of Cooper in order to determine communication channel quality and apply mitigating techniques to achieve a desired quality of service.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450

Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Fayyaz Alam whose telephone number is (571) 270-1102. The Examiner can normally be reached on Monday-Friday from 9:30am to 7:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Fayyaz Alam

July 20, 2010

/Edward Urban/
Supervisory Patent Examiner, Art Unit 2618